

larger end, whilst about a dozen or so freckles are scattered about the rest of the egg. The surface of the eggs is close, hard, and rather glossy, and the shell is decidedly stout. In shape they are rather broad ovals, considerably depressed and pointed towards the smaller end.

When taken the eggs were perfectly fresh.

I examined the stomach of the bird, which was trapped on the nest, and found it to contain a few ants and a mass of small bright blue beetles of a kind which seem to be very numerous on the flowers of orchids growing near the ground.

ON NEW AND LITTLE-KNOWN BUTTERFLIES FROM THE INDO-MALAYAN REGION.

BY LIONEL DE NICEVILLE, F. E. S., C. M. Z. S., &c.

(*With Plates H, I and J.*)

Family NYMPHALIDÆ.

Subfamily SATYRINÆ.

1. RAGADIA CRITOLAUS, n. sp. Pl. H, Fig. 1, ♂.

HABITAT: Burma.

EXPANSE: ♂, 1·5 to 1·7; ♀, 1·6 inches.

DESCRIPTION: MALE. UPPERSIDE, *both wings* with the ground-colour about equally divided between black and white. *Forewing* with the white area commencing on the inner margin about half its length from the base of the wing and almost reaching the anal angle, extending towards the apex of the wing, which it does not reach, in a triangular or wedge-shaped figure, bearing a series of five round black spots between the veins, of which the three posterior ones are well-formed and separated, the two anterior ones have their outer edges more or less merged into the outer black border of the wing; the base of the wing is occupied very obliquely by two streaks a little darker than the blackish ground-colour; there is also



Chuckrabutty del.

Mitern Bros. Chromo lith. London.

INDO-MALAYAN BUTTERFLIES.



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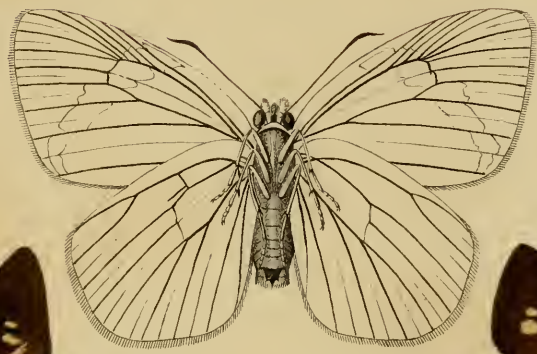




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INDO-MALAYAN BUTTERFLIES.

a narrow whitish streak below the costa ; the outer margin is broadly black, with its inner edge festooned. *Hindwing* with the dusky basal area crossed by two straight dark lines ; a broad discal black band touching the costa but not quite reaching the abdominal margin, broadest in the middle, narrowing towards both ends ; the outer margin broadly black, bearing a slightly paler line. **UNDER-SIDE**, *both wings* precisely as in *R. crito, mihi*,* from Bhutan, but all the black bands narrower, the white ground being consequently more extensive. **FEMALE** differs from the male only in its slightly broader and more rounded wings.

Nearest to *R. crito*, from which it may be known at a glance by the greater extent of the white ground-colour on the upperside of both wings, that character will also separate it from *R. crisilla* Hewitson, equally well, which from the figure I judge the type specimen to be taken from a female, and it differs markedly from the same sex of *R. critolaus* in having on the upperside of both wings the outer discal black band (which on the underside bears the ocelli) twice as broad, thus considerably reducing the white area on each side of it. *R. latifasciata*, Leech, † from Moupin, Western China, is also an allied species, but from the description differs in several details of the markings, and is much larger.

Major C. T. Bingham and I captured this species in considerable numbers in October, 1891, and 1892, in the virgin forests at the foot of the Daunat Range, Middle Tenasserim. The butterfly always keeps in the shade of the great trees, and flies amongst the bushes and brushwood, on which it often settles. Its flight is only equalled in weakness and gentleness by *Leptosia xiphia*, Fabricius.

Subfamily ELYMNINÆ.

2. DYCTIS ESACOIDES, n. sp., Pl. H, Fig. 2, ♂.

HABITAT: Perak, Malay Peninsula ; Battak Mountains, Sumatra.

EXPANSE: ♂, 2·6 inches.

DESCRIPTION: **MALE**. **UPPERSIDE**, *both wings* very deep indigo-

* Journ. Bombay Natural History Society, vol. v, p. 199, n. 1, pl. D, figs. 1, *male*; 2, *female* (1890).

† The Entomologist, vol. xxiv, Suppl. p. 25 (1891).

blue, paler towards the base. *Forewing* with a curved decreasing marginal bluish-grey band, broadest at the costa, continuous as far as the third median nervule, posteriorly broken up into three large rounded inwardly-pointed spots. *Hindwing* with a series of large lunular bluish-grey spots placed on the margin, one in each interspace. **UNDERSIDE**, *both wings* fuscous, very thickly reticulated with black, the mottling coarser on the hindwing. *Forewing* with the ground-colour of the apical half of the wing pale violet; an oval black spot towards the outer margin in the upper discoidal interspace. *Hindwing* with a submarginal series of six round black spots, pupilled with white, the two anterior ones the largest, the fourth very minute, the one in the submedian interspace geminated; in the submedian and internal interspaces, especially towards the base of the wing, are some large vermilion-coloured blotches, which take the place of the fuscous ground-colour.

Nearest to *D. esaca*, Westwood, which is known to me by Professor Westwood's short description only, and by Mr. Hewitson's figure. These two writers give the habitat of that species as the East Indies, and Mr. Butler says that the type specimen came from Assam, and was collected by Mr. Warwick. Messrs. Wallace and Moore record it from Borneo. *D. esacoides* differs from *D. esaca* in the colour of the ground of the upperside. The underside also differs in coloration, being fuscous irrorated with black instead of red-brown as described and figured by Hewitson, and markedly in the presence of the vermilion-coloured blotches on the abdominal area of the hindwing, these being entirely absent in *D. esaca*. It also differs from the type of *D. andersonii*, Moore, from the Mergui Archipelago, in its larger size, darker coloration, especially on the underside, the latter possessing a well-marked whitish exterior marginal area to the hindwing, which is wholly lacking in *D. esacoides*. From Herr Georg Semper's figure of the male of *D. egialina*, Felder, in his work on the Butterflies of the Philippine Islands, pl. xii, figs. 7, 8, *D. esacoides* would appear to be an allied species, differing however in possessing a black spot on the underside of the forewing near the apex, and lacking the series of white spots towards the outer margin on the underside of the hindwing which are found in *D. egialina*. The female of *D. egialina* is figured by Felder in *Reise Novara*, Lep., pl. lxi, figs. 7, 8, and is

evidently allied to *E. godferyi*, Distant, Rhop. Malay., p. 423, n. 10, pl. xxxix, fig. 5, *female* (1886), and, but for the fact that Mr. Distant says he possesses males of the latter species from North Borneo, and describes them as being very similar to the female, while *D. esacoidea* is markedly different both in coloration and markings, I should have come to the conclusion that *E. godferyi* was the female and *D. esacoidea* the male of one and the same species.

Described from a single specimen collected in Perak by Mr. J. Wray, Jr., and kindly presented to me by him. Dr. L. Martin, of Deli, Sumatra, has sent me a coloured drawing of two specimens of this species taken by him in that island in the Battak mountains, which appears to agree absolutely with the type.

Subfamily MORPHINÆ.

3. DISCOPHORA DIS, n. sp., Pl. H, Fig. 3, ♂.

HABITAT: Deli, N.-E. Sumatra, Borneo.

EXPANSE: ♂, 3·9; ♀, 4·2 inches.

DESCRIPTION: MALE. UPPERSIDE, *both wings* rich dark indigo-blue, somewhat paler towards the margins, tinted with ferruginous at the base. *Forewing* with a curved discal macular band, consisting of five shining light blue spots, the uppermost in the upper discoidal interspace squarish and whitish; the spot posterior to this occupying the whole breadth of the interspace; the two following highly lunulated; the posterior spot of all incomplete, consisting of the anterior half of a lunule only; beyond the discal is a submarginal series of four spots, the uppermost in the lower discoidal interspace rounded, the three following lunular. *Hindwing* with the costa broadly pale, the usual discal velvety black spot. UNDERSIDE, *both wings* precisely as in *D. celinde*, Stoll, but the ground-colour of a darker and richer shade. FEMALE. Almost precisely similar to the same sex of *D. celinde*, but the inner edge of the broad discal ochreous band a little nearer the disco-cellular nervules on the UPPERSIDE of the *forewing*; no ochreous discal spots posterior to this band; the *hindwing* darker than in *D. celinde*, lacking all markings. UNDERSIDE, *both wings* with the ground-colour darker than in *D. celinde*.

As far as I can discover, no species of *Discophora* has been described as endemic to Sumatra, but Herr Georg Semper incidentally

mentions *D. celinde*, Stoll, and *D. cheops*, Felder, while Mr. Distant cites *D. sondaica*, Boisduval, as occurring in that island. The latter species belongs to the group of *D. tullia*, Cramer, which is quite distinct from the group of *D. celinde*, Stoll. *D. dis* in the male is a species abundantly distinct from any species of the latter group, a list of which, as far as I have been able to make them out, is given below :—

1. *Discophora celinde*, from Java (Stoll) = *aristides*, from the Indies (Fabricius) = *timora*, from Timor (Doubleday and Hewitson).
- 1a. *D. celinde*, var. *continentalis*, from India (Staudinger).
- 1b. *D. celinde*, var. *andamensis*, from the South Andaman Isles (Staudinger).
2. *D. menetho*, from India (Fabricius).
3. *D. necho*, from Java (Felder).
4. *D. cheops*, from Borneo (Felder).
5. *D. dis*, from Sumatra and Borneo (de Nicéville).
6. *D. ogina*, from.....(Hübner). Godart describes the male of *D. ogina* from Java, but does not refer to the species as being Hübner's. The latter figures a male, while Semper figures a female from the Philippines = *melinda* (teste Semper), from Luzon (Felder).
7. *D. bambusæ*, from Halmahera (Gilolo) (Felder) = *celebensis* (teste Rothschild) from Celebes (Holland).

Nos. 6 and 7 of the above list differ from the other five species in having more than two ocelli to the hindwing on the underside. The genus sadly requires to be monographed; it is highly improbable that all the species given above as distinct are really so. Both Butler and Semper retain the *D. menetho* of Fabricius as distinct, while Kirby and Distant place it as a synonym of *D. celinde*. If Donovan's figure of it (female) is correct, I possess a specimen from Java agreeing closely with the figure, and the species appears to be distinct from *D. celinde*.

D. dis is described from two pairs kindly sent me by Dr. L. Martin, of Deli, Sumatra, and one male subsequently received from Mons. A. de Plason, from Nanga Badau, Borneo (1886). Dr. Martin has bred the larva on *Imperata arundinacea* and *Saccharum officinale* (sugar-cane). The larvæ invariably keep in pairs.

Family LYCÆNIDÆ.

4. PITHECOPS BASSARIS, n. sp., Pl. H, Figs. 4, ♂ ; 5, ♀.

HABITAT: Ké Islands.

EXPANSE: ♂, 1·25; ♀, 1·40 inches.

DESCRIPTION: MALE. UPPERSIDE, *forewing* with the base and the outer margin broadly black—the black basal portion extends to about half the length of the discoidal cell, the outer black portion commences near the costa a little beyond half its length from the base of the wing, and sweeps round in a regular curve to the anal angle where it is about a millimeter in breadth; the costa narrowly black; the rest of the wing pure white. *Hindwing* black all except a large patch of pure white which occupies the apex of the wing to about the middle (or rather beyond) of the costa and extends on the disc as far as the third median nervule. UNDERSIDE, *forewing* with a black costal thread, the outer margin blackish, but less broadly so than on the upperside, bearing a series of five increasing submarginal white lunules, and a marginal series of very fine linear white spots. *Hindwing* with a very large round intensely black spot on the costa just before its middle, the outer margin broadly black not reaching the apex, decreasing somewhat towards the anal angle, bearing a series of white lunules and another of white spots much as in the forewing, these two series of markings almost coalescing and thus giving the appearance of a series of marginal round black spots incompletely surrounded each by a white line. FEMALE. Differs from the male in being larger and blacker. *Forewing* with the costa broadly black, the black area reaching as far as the subcostal nervure; the outer black area much larger, being about three millimeters wide at the anal angle. *Hindwing* as in the male. UNDERSIDE, *both wings* with the white markings in the outer black marginal area more prominent. *Antennæ* black, the shaft prominently spotted (not annulated) with white below.

From *P. dionisius*, Boisduval, * as figured by Mr. Druce, both

* *Lycena dionisius*, Boisduval, Dumont D'Urville's Voyage de l'Astrolabe, Faune Ent., pt. i, p. 82, n. 11 (1832); *Pithecopis dionisius*, Druce, Proc. Zool. Soc. Lond., 1891, p. 358, pl. xxxi, fig. i, from New Guinea and the Solomon Isles (Druce); Aru, Islands and Batjan (Ribbe); *Eupsychellus dionisius*, Röber, Tijds. voor Ent., vol. xxxiv, p. 316 (1891), from Ceram, Goram, and Key.

sexes (but more especially the female) differ in having the black area more extensive on the upperside of the forewing, and on both wings on the underside. It differs from *P. dionisius*, var. *steirema*, Druce,* in having in both sexes the white area of the hindwing on the upperside very much larger, extending to the third median nervule, while in *P. steirema* it reaches to the second subcostal nervule only; *P. bassaris* also lacks the small black spots on the costal margin of the forewing on the underside found in both *P. dionisius* and *P. steirema*.

In *Pithecopis hylax*, Fabricius, the first subcostal nervule is entirely anastomosed with the costal nervule except a short portion of the base which is free. In the male of *P. bassaris* the first subcostal nervule appears to cut straight through the costal nervule instead of anastomosing with it, while in the female it anastomoses for a short distance, and then again becomes free and reaches the costa. Herr Röber's genus *Eupsychellus* proposed for *L. dionisius* should I think fall before *Pithecopis*.

Described from five male and one female specimen kindly presented to me by Herr Georg Semper of Altona.

5. CYANIRIS CEYX, n. sp., Pl. H, Figs. 6, ♂; 7, ♀.

HABITAT: Java.

EXPANSE: ♂, ♀, 1·2 inches.

DESCRIPTION: MALE. UPPERSIDE, *both wings* somewhat pale blue. *Forewing* with the costa very narrowly, the outer margin more widely but decreasingly towards the anal angle black; an obscure irrotated patch of white on the disc between the median nervules. *Cilia* at the apex black, becoming white at the anal angle. *Hindwing* with the outer two-thirds white, glossed with blue in some lights, crossed by the dark veins; a series of obscure small round dusky spots on the outer margin, one in each interspace. *Cilia* pure white, bounded within by a very fine black thread. UNDERSIDE, *both wings* white, of a slightly bluish shade. *Forewing* with a narrow dusky line defining the disco-cellular nervules; a curved discal series of five spots, and a similar number of smaller rounded marginal spots.

* *Pithecopis steirema*, Druce, Ann. and Mag. of Nat. Hist., sixth series, vol. v, p. 25, n. 3 (1890); *P. dionisius*, var. *steirema*, id., Proc. Zool. Soc. Lond., 1891, p. 358, pl. xxxi, fig. 2, from the Solomon Isles (Druce).

Hindwing with the usual spots scattered over the disc, but all very small; a marginal series of seven small round prominent spots. FEMALE. UPPERSIDE, *forewing* with the outer black margin very much wider than in the male. *Hindwing* with the costa broadly dusky. Otherwise similar to the male.

Perhaps nearest to *C. akasa*, Horsfield, from South India, Ceylon, Java, and Sambawa, from which it differs in the far greater extent and different shade of blue on the upperside, and the narrower outer black border to the forewing: the two species agree absolutely on the underside. It is also near to *C. albocæruleus*, Moore, from the Khasi Hills and Himalayas, but has more blue coloration and a narrower black border on the forewing on the upperside.

At present the genus *Cyaniris* is represented in my collection by five species only from Java, viz.:—*C. akasa*, Horsfield, *C. puspa*, Horsfield, *C. huegeli*, Moore, apparently identical with Western Himalayan specimens, *C. coalita*, de Nicéville, and *C. ceyx*, de Nicéville. Mr. Doherty speaks of capturing seven species in the mountains of Eastern Java.*

C. ceyx is described from two male and one female specimen sent to me by Heer M. C. Piepers.

6. ARHOPALA ACE, n. sp., Pl. H, Fig. 13, ♂.

HABITAT: Perak, Malay Peninsula.

EXPANSE: ♂, 1·9,

DESCRIPTION: MALE. UPPERSIDE, *both wings* rich violet-blue,† the outer margins very narrowly black. *Hindwing* with the costa broadly black, the abdominal margin fuscous; the anal lobe small, black; the tail moderately long, black tipped with white. UNDERSIDE, *both wings* dull fuscous or hair-brown, without any gloss, all the macular markings but very slightly darker than the ground-colour, their outer whitish narrow bounding lines alone somewhat prominent. *Forewing* with the three usual increasing spots in the discoidal cell and two below it divided by the first median nervule; the discal band broad, consisting of six portions, the two lower

* Journ. A. S. B., vol. lviii, pt. 2, p. 435 (1889).

† Of the exact shade of the male of the extremely common butterfly from Singapore, which I have identified a little doubtfully as *Arhopala aroa*, Hewitson.

portions in one straight line but dislocated and shifted towards the base of the wing posterior to the third median nervule; the four upper portions of almost equal size, and all but the anteriormost smallest portion (which is shifted inwardly) in one straight line; an obscure submarginal fascia; inner margin of the wing as far as the first median nervule rather paler than the rest of the surface. *Hindwing* with the markings as usual; the anal lobe and spot beyond the base of the tail small and black; the anal area somewhat extensively sprinkled with dull metallic green scales.

A. ace appears to be nearest to *A. adorea*, *mih*, from typical specimens of which from Singapore it differs in the ground-colour of the upperside being rich violet- (almost ultramarine-) blue instead of deep bluish-purple, the outer black margins even narrower, the ground-colour of the underside much duller brown, the spots and bands but very slightly darker than the ground-colour, and the forewing lacks the costal spot anterior to the spot at the end of the discoidal cell. From *A. aroa*, Hewitson (as identified by me), it may be known by its larger size, and by the same differences on the underside as are found between it and *A. adorea*.

Described from a single example from Perak kindly given to me by Mr. J. Wray, Jr.

7. ARHOPALA ACESTES, n. sp., Pl. H, Fig. 14, ♂.

HABITAT: Perak.

EXPANSE: ♂, 2.0 inches.

DESCRIPTION: MALE. UPPERSIDE, *both wings* very deep violet-blue of the exact shade found in the male of *A. diardi*, Hewitson, from the Khasi Hills, and agreeing therewith also in size and outline, except that *A. acestes* lacks the tooth-like projections from both sides of the tail of the hindwing seen in *A. diardi*, and the tail is longer and narrower; outer margins very narrowly black. *Hindwing* with the costa and abdominal margin broadly black; anal lobe very small; tail of moderate length, black tipped with white. UNDERSIDE, *both wings* rich brown, very strongly, especially on the hindwing, glossed with purple; all the markings prominent, darker than the ground-colour, outwardly defined with grey tinted with the purple gloss. *Forewing* with the inner margin as far as the submedian nervure grey, with a large

patch of grey also in the interno-median interspace, sharply inwardly defined opposite the origin of the first median nervule by the waved outer margin of the patch of the ground-colour which occupies the basal half of the interno-median interspace; the usual three increasing spots in the discoidal cell, a spot at the base of the first median interspace, a discal band of five spots, the upper three of equal size, in one straight line, the lower two a little larger, increasing, slightly shifted inwardly; a well-marked distinct submarginal series of six quadrate spots, each spot defined on both sides with whitish. *Hindwing* with the four anterior basal spots very prominent, the discal spots and bands as usual, a well-marked submarginal series of five spots, followed by three jet-black spots broadly crowned with rich metallic green scales.

This is a very beautiful and distinct species, startlingly like *A. diardi* on the upperside, but like no species with which I am acquainted on the underside. The absence of any costal spots on the forewing allies it to *A. ace*, *mihii*, to *A. ate*, Hewitson, and to figs. 29 and 30 of *A. adatha*, Hewitson, but the purple glossing of the underside will instantly distinguish it from all these species, but apparently allies it to *A. achelous*, Hewitson (a species I have not seen); the latter, however, has three costal spots to the forewing on the underside.

Described from a single specimen from Perak kindly presented to me by Mr. J. Wray, Jr.

8. ARHOPALA ARCA, n. sp., Pl. H, Fig. 15, ♀.

HABITAT: Celebes.

EXPANSE: ♀, 1.9 inches.

DESCRIPTION: FEMALE. UPPERSIDE, *both wings* shining purplish-fuscous, bronzy in some lights. *Forewing* with the discoidal cell entirely light non-iridescent blue, two similar narrow streaks in the median interspaces reaching half-way to the margin, and the area behind the discoidal cell as far as the inner margin of the same colour, filling the basal half of the interspace. *Cilia* anteriorly fuscous, posteriorly from the first median nervule white. *Hindwing* with the discoidal cell and the area immediately around it blue; with three *tails*, all tipped with white, the one at the termination of the first median nervule long, the others, one on each side of the long tail, short. *Cilia* white. UNDERSIDE, *both wings* creamy-white.

Forewing with the costal and basal areas entirely rich dark brown, a very broad even brown band occupying the end of the discoidal cell and extending a considerable distance beyond it, commencing in the dark costal area and ending abruptly on the first median nervule, this disco-cellular band is separated from the basal area by a very narrow streak of the ground-colour; a very broad (as broad as the disco-cellular band) discal band, commencing on the costa, ending on the first median nervule, below which in the submedian interspace is a diffused dark spot; a narrow submarginal band; an anteciliary dark line. *Hindwing* with a broad rich dark brown basal area sharply defined against the creamy-white ground-colour; a double line defining the disco-cellular nervules, with two round spots in continuation one each in the median interspaces; beyond these is another broad dark brown area, which reaches almost to the outer margin, and bears inwardly traces of the usual discal maculated band; a lunular deep black spot on the margin in the first median interspace crowned with metallic green scales; some similar scales in the interspace behind; the anal lobe small, bearing a round deep black spot also crowned with metallic green scales; an anteciliary black line.

This very beautiful and distinct species clearly belongs to the group of which *A. apidanus*, Cramer, which occurs in Burma, the Malay Peninsula, Sumatra, Java, Borneo, Billitan, and Sambawa, is the type, and to which the "*Flos*" *artegal*, Doherty, from Burma and Perak, and "*Flos*" *ahamus*, Doherty, from Margherita in Upper Assam, are allies. The latter species may indeed be synonymous with *A. apidanus*. *A. arca* is however quite distinct from any of these, having the discal band of the forewing on the underside at least twice as wide, and the dark basal area of both wings strongly contrasted with the creamy-white ground-colour beyond; in *A. apidanus* the ground-colour is much darker. The strongly contrasted colours of the underside is a marked feature in the hindwing of "*Panchala*" *morphina*, Distant, from Perak in the Malay Peninsula, an otherwise abundantly distinct tailless species. *A. arca* differs also from *A. apidanus* and allies in having the blue coloration of the upperside far more restricted, and in the prominently white cilia.

Described from a single specimen received from Heer M. C. Piepers, of Batavia, Java.

9. ARHOPALA ASIA, n. sp., Pl. H, Fig. 16, ♂.

HABITAT: Quang, Malay Peninsula.

EXPANSE: ♂, 1.8 inches.

DESCRIPTION: MALE. UPPERSIDE, *both wings* deep dull purple without any gloss. *Forewing* with the costa and outer margin most narrowly black. *Hindwing* with the outer margin most narrowly black, the abdominal margin up to the submedian nervure fuscous. UNDERSIDE, *both wings* dull pale brown, all the markings inconspicuous, of a slightly darker colour than the ground, outwardly defined with gray. *Forewing* with a small round spot towards the base of the discoidal cell, a larger oval one across its middle, a quadrate one at its end, a spot at the base of the first median interspace, a broad regular discal band consisting of seven spots, gradually increasing to the sixth spot, the seventh in the interno-median interspace small; an indistinct submarginal fascia. *Hindwing* with six rounded basal spots, an oblong spot at the end of the cell, the usual macular discal band, recurved posteriorly to the abdominal margin; a double series of submarginal lunules, faint traces of metallic blue scales on the margin in the first median interspace, and a large patch of similar scales at the anal angle, a small deep black round spot on the small anal lobe.

This belongs to a very difficult group of the genus, all the species of which are tailless. It appears to be very close to *A. amphimuta*, Felder, which is known to me by the description and figure of the underside only, and with which it appears to agree on the upper-side, but differs on the underside of the forewing in having the inner margin very slightly paler instead of much paler than the rest of the surface, the discal band also much more extended at each end and not prominently dislocated at the first median nervule.

Described from a single example in my collection.

10. ARHOPALA ÆETA, n. sp., Pl. H, Fig. 17, ♀.

HABITAT: Burma.

EXPANSE: ♀, 1.6 inches.

DESCRIPTION: FEMALE. UPPERSIDE, *both wings* bluish-purple. *Forewing* with the costa broadly reaching to the subcostal nervure, a prominent tooth-shaped mark at the end of the discoidal cell, and the outer margin (widest at the apex) broadly fuscous. *Hindwing* with more than half the surface dull brownish-fuscous, the purple coloration hardly extending beyond the discoidal cell. UNDERSIDE, *both wings* grey, the markings dark brown, outwardly defined with whitish of a lighter shade than the grey ground-colour. *Forewing* with a small oval spot towards the base of the cell, a larger one at its middle, a still larger increasing one at its end which is continued widely to the first median nervule, filling the bases of the median interspaces; a large dark brown patch occupying the basal half of the interno-median interspace, its outer edge sharply defined and inclined inwardly obliquely; a broad even almost straight discal unbroken macular fascia, commencing on the costa, ending on the first median nervule; a very indistinct pale brown spot inwardly below it in the interno-median interspace; a broad well-marked increasing submarginal fascia. *Hindwing* with all the macular markings paler than in the forewing, but standing out particularly clearly on the gray ground, small, arranged as usual; a well-marked lunulated submarginal fascia, broad anterior to, narrow posterior to, the second median nervule; no anal lobe, metallic anal sprinklings, or tail, but the apices of all the veins slightly extended beyond the general outline of the outer margin of the wing, the apex of the first median nervule slightly more produced tooth-like than the rest.

On the upperside, omitting the lack of tail, this species very closely resembles the same sex of *A. rama*, Kollar; on the underside it is most like *A. dodonæa*, Moore, but is whiter and with no silky gloss whatever, the markings more prominent, especially on the hindwing. To judge from the description and figure alone it is nearest to *A. asopia*, Hewitson, from Maulmain, which, as described, has the ground-colour of the underside "rufous," but is perhaps better defined as "of a very unusual tint of reddish-ochreous," all the markings less distinct than in *A. æeta*.

Described from a single example captured in June in the

Thaungyin Valley, Middle Tenasserim, by Major C. T. Bingham, who has generously presented the specimen to me.

11. THECLA LEECHII, n. sp.

HABITAT: Khasi Hills (*Hamilton*); Western China (*Leech*).

In the Journal of the Bombay Natural History Society, vol. vi, p. 374 *et seq.*, pl. F, fig. 17 (1891), I described and figured the female of a species of *Satsuma* (= *Thecla*) from the Khasi Hills, but did not name it, as my unique specimen was damaged. I have since received another female in perfect condition from the same region through the kindness of the Rev. Walter A. Hamilton, and propose now to name the species *Thecla leechii* after my friend Mr. J. H. Leech, the author of many papers on palæarctic Lepidoptera, and of "Butterflies from China, Japan, and Corea." He informs me that the species occurs also in Western China, and that it is quite distinct from *Thecla* (*Satsuma*) *chalybeia*, Leech, and *T. (S.) pratti*, Leech, both of which were described from unique male examples.

My friend Heer P. C. T. Snellen of Rotterdam is quite of my opinion that *Satsuma* is a genus which should be sunk under *Thecla*, and writes to me that *Thecla frivaldszkyi*, of Lederer, which is the type of *Satsuma*, agrees absolutely in structure with the British "Green Hairstreak," *Thecla rubi*, Linnæus.

12. CAMENA CARMENTALIS, n. sp., Pl. H, Fig. 10, ♂.

HABITAT: Khasi Hills.

EXPANSE: ♂, 1.25 inches.

DESCRIPTION: MALE. UPPERSIDE, *both wings* black. *Forewing* with the whole of the discoidal cell, a considerable area at the base of the first median interspace, and the interno-median and sutural areas to near the outer margin shining bluish-purple. *Hindwing* with a large glossy black patch from the costal base of the wing occupying the whole of the discoidal cell; the disc shining bluish-purple; the anal lobe bearing a deep black spot, outwardly with a few turquoise-blue scales, anteriorly broadly crowned with dull ochreous. *Tails* black, tipped with white. UNDERSIDE, *both wings* French-grey washed with ochreous; a very fine indistinct discal

dark line, outwardly defined with whitish, broken and lunulated in the hindwing; an obsolete marginal fascia. *Forewing* with the usual tuft of long setæ attached to the inner margin and turned under and backwards concolorous with the ground-colour. *Hindwing* with the usual oval black spot on the outer margin in the first median interspace, very broadly surrounded with ochreous, which colour is continued in a lunulated line to the abdominal margin; anal lobe deep black outwardly bearing some metallic blue scales; a short streak of metallic blue scales placed outwardly against the submedian nervure towards its termination; a fine black anteciliary line inwardly defined by a narrow white line as far as the third median nervule.

Near to *C. lila*, Moore, from Sylhet, but much smaller (1.25 as against 1.80 inches), this species being known to me by the description and figure only; the bluish-purple area reaching to nearer the outer margin on the upperside of the forewing; the discal line on the underside much less prominent than in some specimens of *C. deva*, Moore, *C. lila* being said to have this line "much more prominent"—this, however, is probably a variable character. Also near to *C. ister*, Hewitson, from "India," the female of which only is known, and which is described as being cerulean-blue on the upperside of both wings, that colour on the hindwing reaching much closer to the outer margin than in *C. carmentalis*. The underside of the two species agree very closely, and *C. carmentalis* is not improbably the opposite sex of *C. ister*, unless the latter should be, as I have supposed, a varietal form of the female of *C. cleobis*, Godart.

Described from two examples from the Khasi Hills kindly given to me by the Rev. Walter A. Hamilton, by whose native collectors they were obtained.

13. TAJURIA THYIA, n. sp., Pl. H, Fig. 11, ♂.

HABITAT: Khasi Hills.

EXPANSE: ♂, 1.5 inches.

DESCRIPTION: MALE. UPPERSIDE, *both wings* black. *Forewing* with the posterior half of the discoidal cell, a small portion of the base of the first median interspace, and the interno-median and sutural areas to near the outer margin bluish-purple of the same shade as

in *T. diaeus*, Hewitson. *Hindwing* with all except the costa broadly and the abdominal margin (which latter is grey) bluish-purple; a very small black anal lobe; the outer margin very narrowly black. *Tails* black, tipped with white. **UNDERSIDE**, *both wings* French-grey; a fine anteciliary black thread. *Forewing* with a fine discal straight broken blackish line, ending anteriorly on the subcostal, posteriorly on the submedian nervure; an indistinct submarginal pale broken line. *Hindwing* with a much broken discal line, posteriorly recurved to the abdominal margin; a submarginal pale broken line; a marginal white line from the anal angle to the third median nervure; an oval deep black spot near the outer margin in the first median interspace, surrounded by an ochreous ring; two lunular marks in the submedian interspace made up of mixed black and blue scales; a small deep black spot on the anal lobe, outwardly bearing a few turquoise-blue scales, anteriorly defined with a small rich ochreous patch.

Near to *T. diaeus*, Hewitson, from the Western Himalayas, Sikkim and Khasi Hills, from which it differs on the underside in the discal line of the forewing being broken and not reaching the costa, that line on the hindwing also being broken and placed nearer to and parallel with the outer margin. Still nearer to *T. albiplaga*, *miki*, from Sikkim, differing therefrom in the purplish-blue instead of cerulean-blue of the upperside of both wings; the much smaller extent of the blue colour on the forewing; and on the underside of both wings in the absence of the dark lines defining the disco-cellular nervules.

Described from a single example kindly placed at my disposal by the Rev. Walter A. Hamilton, by whose native collectors it was obtained.

14. SUASA SUESSA, n. sp., Pl. II, Figs. 8, ♂; 9, ♀.

HABITAT: Perak, Selangor—both in the Malay Peninsula.

EXPANSE: ♂, .8 to 1.0; ♀, 1.1 inch.

DESCRIPTION: MALE. **UPPERSIDE**, *both wings* bronzy-fuscous. *Forewing* with the basal area bluish-violet, this area anteriorly bounded by the subcostal nervure, posteriorly reaching to the inner margin. *Cilia* fuscous, becoming white at the anal angle. *Hindwing* with the posterior two-thirds bluish-violet; a large rounded spot on the outer margin in the first median interspace, the anal lobe, and a spot

placed between them but a little removed from the margin, all deep black; a black anteciliary thread from the anal angle to the second median nervule. *Cilia* white. *Tails* white, anteriorly black in the middle. **UNDERSIDE**, *both wings* of the purest china white. *Forewing* with the apical third of the wing ochreous, bearing inwardly a band of the ground-colour from the inner margin to the lower discoidal nervule, and a short white line beyond in the submedian interspace. *Hindwing* with two prominent round subcostal black spots, the inner the larger; two fine broken submarginal black threads, the outer consisting of five detached portions, one in each interspace from the costa to the second median nervule, the inner continuous, extending from the first subcostal nervule to the internal nervule; the three black spots at the anal angle as on the upperside; a fine black line extends from just above the anal lobe to the abdominal margins. **FEMALE**. **UPPERSIDE**, *both wings* shining brown. *Forewing* unmarked. *Hindwing* with the anal area broadly white, the inner edge of this area scalloped, bearing the three black spots and the black anteciliary thread as in the male. **UNDERSIDE**, *forewing* as in the male. *Hindwing* lacking the internal of the subcostal black spots, otherwise as in the male.

Closely allied to *S. lisides*, Hewitson, which occurs in Sylhet, the Khasi Hills, the Tenasserim Valley, and the Mergui Archipelago, being replaced apparently to the southwards by the above-described species, which differs from it in the entire absence in both sexes of the rufous area on the upperside of the forewing. In "The Butterflies of India, Burmah and Ceylon," vol. iii, p. 387, n. 942 (1890), I identified the type female of *S. suessa* as an aberrational form of *S. lisides*, and described it as follows:—"A female from Selangor in the Malay Peninsula differs from two females from Burma in having the upperside of the forewing entirely smoky-brown, the orange patch being wholly wanting; on the hindwing the white irroration at the anal angle is much reduced."

Described from two male examples from Perak, and a female from Selangor.

15. DEUDORIX GÆTULIA, n. sp., Pl. H, Fig. 12, ♂.

HABITAT: Khasi Hills.

EXPANSE: ♂, 1·9 inches.

DESCRIPTION: MALE. UPPERSIDE, *both wings* black, glossed in certain lights over the black area with rich purple. *Cilia* black. *Forewing* with a large triangular coppery-red discal area, anteriorly bounded by the median nervure and third median nervule, posteriorly by the submedian nervure, its outer edge irregular, well removed from the outer margin. *Hindwing* with all except the costa broadly, the base, the abdominal margin broadly, and the outer margin narrowly coppery-red, the veins crossing the red area being black; *anal lobe* coppery-red; *tail* black, tipped with white. UNDERSIDE, *both wings* fawn-colour with a somewhat silvery sheen, especially on the hindwing; the disco-cellular nervules marked on both sides by a fine white line; a narrow outer-discal catenulated band composed of oval spots a little darker than the ground-colour, outwardly defined with white, the portion of the band on the forewing nearly straight, anteriorly ending on the upper discoidal nervule, posteriorly on the submedian nervure; on the hindwing the band is very irregular and broken, posteriorly recurved and terminating on the abdominal margin. *Hindwing* with a large round black spot near the outer margin in the first median interspace, interiorly broadly surrounded by orange colour; *anal lobe* black; a very fine black anteciliary thread, bounded on each side by an equally fine white thread. *Antenna* black, beneath towards the club white, and slightly marked with whitish at the joints for a short distance posterior to the white portion, the remains of obsolescent annulations. *Head* black; the face and a line round the eyes white. *Palpi* white below, black above, the third joint entirely black. *Thorax* above black, beneath white. *Abdomen* anteriorly black, posteriorly coppery-red above, beneath pale ochreous.

Nearest to *D. epijarbas*, Moore, from which it differs on the upperside of the forewing in having that portion of the coppery-red area in the interno-median interspace posteriorly cut away; on the hindwing in having a well defined outer black margin, in *D. epijarbas* the black margin is reduced to a mere thread; the anal lobe also is entirely red—in *D. epijarbas* it is ochreous, bearing a black spot in the middle, this latter marked outwardly with some metallic turquoise-blue scales; on the underside the ground-colour is different, being hair-brown in *D. epijarbas*, and fawn-colour strongly washed with

silvery in *D. gætulia*; the lines defining the disco-cellular nervules and those forming the discal band much closer together; there are also no metallic green scales on the outer margin of the hindwing in the first median interspace and anterior to the anal lobe usually found in *D. epijarbas*. It is also allied to *D. diovis*, Hewitson, from Australia, to *D. woodfordi*, Druce,* and to *D. viridens*, Druce,† both from the Solomon Islands, but the broad black margin to the hindwing on the upperside and the entirely red anal lobe will at once distinguish it from those species. Another allied species is the *D. calderon* of Kheil,‡ from Nias Island, but it has the scarlet areas on the upperside smaller, and from the description there does not appear to be any discal fascia on the underside of the forewing. Still other allied species are *D. ribbei*, Röber,§ and *D. affinis*, Röber,|| both from South Celebes, but the former has far more, while the latter has considerably less, scarlet on the upperside of both wings than *D. gætulia*.

Described from two specimens, one (the wings of which have been placed between tale) in the collection of the Rev. Walter H. Hamilton, the other in my own collection, and kindly presented to me by that gentleman, both obtained in the Khasi Hills by Mr. Hamilton's native collectors.

P. S.—Since the above was written I have seen the MS. type male specimen of Mr. Elwes' "*Rapala*" *hypargyria* from the Karen Hills, East Pegu. On the upperside of the forewing in *D. gætulia* the coppery-red discal area extends just anterior to the third median nervule, in "*R.*" *hypargyria* it barely reaches that vein; on the hindwing in *D. gætulia* the anal lobe is coppery-red, in "*R.*" *hypargyria* it is jet-black crowned with snow-white. On the underside "*R.*" *hypargyria* is paler, much more silvery-white, on the forewing there are no disco-cellular lines or discal macular band, and on the hindwing also the disco-cellular lines are absent, and the

* *Deudoryx woodfordi*, Druce, Proc. Zool. Soc., Lond., 1891, p. 371, pl. xxxii, figs. 13, male; 14, female.

† *Deudoryx viridens*, Druce, Proc. Zool. Soc., Lond., 1891, p. 371, pl. xxxii, fig. 15, male.

‡ *D. calderon*, Kheil, Rhop. Insel Nias, p. 33, n. 116, pl. iv, fig. 25, male (1884).

§ *D. ribbei*, Röber, Iris, vol. i, p. 68, pl. v, figs 11, male; 10, female (1886).

|| *D. affinis*, Röber, Iris, vol. i, p. 69, pl. v, figs. 13, male; 8, female (1886).

discal band much shorter, reduced to three spots one each in the discoidal and median interspaces and the recurved abdominal portion, the black submarginal spot in the first median interspace not crowned with orange. The two species are closely allied, but are, I believe, distinct—at any rate the type specimens can be separated at a glance.

Family PAPILIONIDÆ.

Subfamily PIERINÆ.

16. METAPORIA HARRIETÆ, n. sp., Pl. I, Figs. 3, ♂; 4, ♀.

HABITAT: Bhutan.

EXPANSE: ♂, 2·9; ♀, 3·0 inches.

DESCRIPTION: MALE. UPPERSIDE, *both wings* black. *Forewing* with a thin white streak at the base of the costa; a large creamy-white patch occupying the basal three-fourths of the discoidal cell, its outer end produced to a point; a large patch occupying the basal two-thirds of the interno-median interspace; a discal series of five more or less oval spots curving evenly round the outer end of the cell, of which the anterior one is rather elongated and narrow, the three following are equal-sized elongated ovals, the posterior one in the first median interspace is the largest and occupies the base of the interspace; the outer margin bears, one on each interspace at its middle, a series of somewhat diffused white spots. *Hind-wing* has the veins on the basal half of the wing defined with white, broadly margined on both sides with black; the discoidal cell almost entirely creamy-white; there is a very narrow costal and a wide subcostal streak, then five spots—one in each interspace—beyond the cell, that in the second median interspace the smallest; two elongated streaks in the submedian interspace, the inner one almost reaching to the margin of the wing, the outer one reached to about half way between the base of the wing and the margin; two basal white streaks occupying the whole of the interspaces divided by the internal nervure; marginal diffused spots as in the forewing, but each spot divided into two portions by the black internervular fold. UNDERSIDE, *forewing* differs from the upperside only in having on the outer margin from the costa to the second median nervule a decreasing series of duplicated white streaks, one pair in

each interspace; a small white spot in the two following interspaces *Hindwing* has at the extreme base of the wing within the precostal nervure the usual bright yellow patch characteristic of the genus; all the creamy-white markings of the upperside are pale yellow; the markings differ from those on the upperside in the presence of a pair of elongated wedge-shaped pale yellow streaks in each interspace, each streak has its apex pointed, its base (which is placed on the outer margin) broad. *Cilia* of both wings on both sides black. FEMALE. Differs from the male only in being somewhat paler throughout.

This species belongs to a newly-discovered and rapidly-increasing group of the genus which has lately been described by Messrs. Charles Oberthür and J. H. Leech, all the species of which occur in Central and Western China.* I submitted the drawings of *M. harrietae* here reproduced to the former; in reply he kindly sends me specimens of several of the allied species, and writes "On my part I am forced to believe that all these species—*oberthuri*, *acræa*, *larraldei*, and their varieties—are only forms of one single very variable species, which approaches *phryxæ*." Mr. Leech writes on seeing the same drawings, "Your species is nearest to my *lotis*, it

* *Pieris larraldei*, Oberthür, Études d'Ent., vol. ii, p. 19, n. 6, pl. i, figs. 2a, 2b, male (1876), from Moupin.

Pieris larraldei, Oberthür, forma *melania*, Oberthür, Études d'Ent., vol. xvi, p. 5, pl. i, fig. 5, male (1892), from Tâ-Tsien-Loh.

Pieris larraldei, Oberthür, forma *nutans*, Oberthür, Études d'Ent., vol. xvi, p. 6, pl. i, fig. 3 (1892), from Ta-pin-tze (Yunnan).

Pieris largeteaui, Oberthür, Études d'Ent., vol. vi, p. 12, n. 2, pl. vii, fig. 1, male (1881), from Kouy-Tchéou, China.

Pieris acræa, Oberthür, Bull. Soc. Ent. France, sixth series, vol. v, p. cxxvi (1885); idem, id., Études d'Ent., vol. xi, p. 15, pl. ii, fig. 7, female (1886), from Thibet.

Pieris goutellei, Oberthür, Études d'Ent., vol. xi, p. 15, pl. ii, fig. 11 (1886), from Tsé-kou, Thibet.

Pieris oberthuri, Leech, The Entomologist, vol. xxiii, p. 46 (1890); id., Oberthür, Études d'Ent., vol. xvi, p. 5, pl. i, fig. 2, male (1892), from Chang Yang, Central China.

Pieris lotis, Leech, The Entomologist, vol. xxiii, p. 192 (1890), from Wa-shan and Ta-Chien-Lu, North-West China.

Pieris hastata, Oberthür, Études d'Ent., vol. xvi, p. 5, pl. i, fig. 6 (1892), from Yunnan.

also has many characters in common with my *oberthuri*, but is quite distinct from either. *P. oberthuri* is to be figured in the next part to be issued of M. Oberthür's 'Études d'Entomologie,' of which I have seen a proof of the plates, and both species will be figured in my 'Butterflies from China, Japan, and Corea.'" As, therefore, *M. harrieta* is, as far as I can tell from the descriptions of the allied species and the figures so far published, distinct from all of them, I will not attempt a comparative description; when figures of all the species are available, it will be easy for any one to distinguish between them for himself. In the sequel it will, I think, probably be found that M. Oberthür is right, and that all these species will be found to be but geographical races of one species, which grade almost imperceptibly one into the other as do the Indian forms of the genus.

Described from a single pair obtained by Mr. F. A. Möller's native collectors in Bhutan, but the exact locality is unknown. Mr. H. J. Elwes records a single specimen of *Pieris* (*Aporia*) *agathon*, Gray, from the interior towards Bhutan,* this being the only other species of the genus hitherto known from this region. Mr. Möller obtained at the same time as he received the *M. harrieta* a single male of *M. agathon*, so the two species (which belong to different groups of the genus) appear to meet and occur together here.

Subfamily PAPILIONINÆ.

17. PAPILIO (*Achillides*) DISCORDIA, n. sp., Pl. I, Fig. 2, ♂.

HABITAT: Gayces and Battak mountains, Sumatra.

EXPANSE: ♂, 5·0 inches.

DESCRIPTION: MALE. UPPERSIDE, *both wings* deep black. *Forewing* thickly and evenly sprinkled throughout with rich green-coloured scales. *Cilia* black. *Hindwing* similarly sprinkled, but with the area between the large blue-green outer-discal patch and the three submarginal green lunules free from the green sprinkling, as also is the costal area as far as the first subcostal nervule; a large outer-discal patch rich emerald-green in some lights and cobalt-blue in others, its inner edge almost straight, slightly bowed inwards towards the base.

* Trans. Ent. Soc., Lond., 1888, p. 415, n. 374.

of the wing, separated from the outer end of the discoidal cell by about three millimeters' length of the ground-colour, not reaching the outer margin between the first subcostal and discoidal nervules, anteriorly bounded by the first subcostal nervule, anterior to which is a blue-green lunule, the patch rapidly attenuated to the second median nervule, beyond which it is continued to the abdominal margin anterior to the red subanal ocellus by a narrow green curved line; the subanal ocellus large, oval, dragon's-blood-red coloured, bearing anteriorly a thin bluish-purple line, with a large central oval black spot, three prominent submarginal green lunules extending one in each interspace from the discoidal to the first median nervule. *Tail* long; rather narrow, slightly constricted anteriorly, sprinkled throughout with rich green-coloured scales. *Cilia* black, white at the interspacial incisures. **UNDERSIDE**, *both wings* deep black. *Forewing* with the anterior half of the cell and the costal area sparsely sprinkled with ochreous scales; a broad discal white fascia crossed by the black veins and internervular folds, commencing widely on the costa, rapidly attenuating to the anal angle, reaching almost to the outer margin anteriorly, but posteriorly separated from it by about two millimeters. *Hindwing* with the basal half of the wing sparsely sprinkled with ochreous scales; three submarginal ocelli like the subanal one on the upperside, one in the costal interspace, and one each in the first median and submedian interspaces; placed between these are four red lunules, one in each interspace, inwardly defined by a thin bluish-purple line. *Tail* sparsely sprinkled with dull greenish scales. *Antennæ* black. *Head, thorax and abdomen* black, sprinkled thickly with rich green scales.

This species belongs to the group of *P. paris*, Linnæus, from which and also from *P. tamilana*, Moore, and *P. arjuna*, Horsfield, it may be instantly distinguished by the large blue-green discal patch on the upperside of the hindwing having its inner edge straighter, the patch more attenuated posteriorly, and especially by its being well separated from the outer end of the cell, in all those species it extends into it; the three submarginal green lunules are also much more prominent in *P. discoidia*; the red area of the subanal ocellus is again much larger, the central oval black portion half the size consequently. The forewing agrees best with

P. arjuna, of which species I possess specimens from Sumatra and Java, but it has absolutely no trace of a discal light green fascia, which fascia is barely traceable in *P. arjuna*, and is prominent in *P. paris* and *P. tamilana*. On the underside of the hindwing the red markings are also larger and more prominent. It is a much larger insect than *P. arjuna*, which occurs with it.

I am unable to follow Mr. A. R. Wallace's remarks on *P. arjuna*, in Trans. Linn. Soc., London, vol. xxv, p. 46, n. 42 (1865), as my Sumatra specimens agree absolutely with Javan ones, nor do these remarks at all apply to *P. discoidia*.

Described from a single example sent to me by Dr. L. Martin, of Deli, Sumatra.

18. PAPILIO (*Paranticopsis*) MACAREUS, Godart, Pl. I, Fig. 1, ♂.

P. macareus, Godart, Enc. Méth., vol. ix, p. 76, n. 144 (1819) ; id., Horsfield, Cat. Lep. Mus. E. I. C., pl. v, fig. 1 (1829) ; id., Elwes, Trans. Ent. Soc. Lond., 1888, p. 431, n. 421.

I have figured a very remarkable male aberration or "sport" of this species, which was obtained by Mr. F. A. Möller's native collectors in the spring of 1892 in Sikkim. On the upperside of both wings the normal marginal series of spots—nine rounded ones in the forewing ; one small and rounded at the anal angle, then four lunulated spots, and lastly, one elongated spot, in the hindwing—are entirely wanting, the discal series of elongated streaks being so extended and prolonged as to include them ; and in the forewing the greenish-white markings in the discoidal cell consist of a patch at the base, and a tripartite patch at the middle, instead of having a small spot at the base, then three very outwardly-obliquely placed lines across the middle, and two spots at the end of the cell (sometimes conjoined) as is found in *P. macareus* ; the four rounded spots immediately beyond the end of the cell in normal *P. macareus* are in the specimen now figured joined to the short streaks beyond. On the underside the markings are very much the same as above, but are larger and more suffused.

Family HESPERIIDÆ.

19. ISMENE FERGUSONII, n. sp., Pl. J, Fig. 6, ♂.

HABITAT : South India.

EXPANSE : ♂, 2·2 to 2·5 ; 2·5. ♀

DESCRIPTION: MALE. UPPERSIDE, *both wings* bronzy shining hair-brown. *Forewing* paler on the disc; with the usual costal vermilion streak, commencing at the base and reaching to about the middle of the wing. (This streak is composed of highly deciduous scales, and in many specimens otherwise perfect it is more or less abraded and wanting.) The usual "male-mark" placed before the middle of the first median interspace, and composed of a more or less rounded clump of deep black scales. *Cilia* cinereous. *Hindwing* has the base and abdominal margin clothed with long iridescent greenish hairs. *Cilia* vermilion, narrow at the apex of the wing, gradually widening to the anal angle where it is widest, extending narrowly a short distance up the abdominal margin. UNDERSIDE, *both wings* paler than above. *Forewing* with the inner margin broadly pale ochreous; some very obscure pale ochreous streaks between the veins beyond the end of the discoidal cell; the extreme base of the wing vermilion, bearing the usual round black spot. *Hindwing* with the usual round black spot at the costal base of the wing, the veins and narrow streaks between the veins on the disc vermilion, the abdominal margin widely streaked with vermilion. *Cilia* of both wings as on the upperside. *Antennæ* black, the club beneath ochreous. *Palpi* with the third joint black, the second and first ochreous, vermilion at the sides. *Thorax* above concolorous with the wings, but clothed with long iridescent greenish hairs, beneath vermilion. *Abdomen* above hair-brown, beneath and anal tuft vermilion. *Legs* vermilion. FEMALE, differs only from the male in the absence of the "male-mark," and in the vermilion cilia being paler, more ochreous.

Nearest to *I. jaina*, Moore, from Sikkim, Bhutan, the Khasi Hills, Cachar, the Shan States, and Borneo (*Druce*), with which it agrees on the upperside, but differs beneath in the forewing in the absence of the "well-defined purplish-white spot within the cell, and a curved discal series of narrow less-defined spots," the inner margin also is pale ochreous, not "yellow." The "*Ismene*" *excellens*, Hopffer, from Celebes,* which I have not seen, is also apparently a closely allied species. It is also near to *Ismene etelka*, Hewitson (*itelka* on plate) † from Sarawak, Borneo, but appears to

* Stet. Ent. Zeit., vol. xxxv, p. 39, n. 119 (1874).

† *Ismene etelka*, Hewitson, Ex. Butt., vol. iv, *Ismene*, pl. ii, figs. 14, 15, female (1867).

differ on the underside of the forewing in not having "the base, the cell, and some rays beyond it between the nervures, rufous-orange," nor has the hindwing "four central spots." *Ismene belesis*, Mabille,* from "India, or more probably Java" is also an allied species.

This butterfly has been recorded from the Nilgiri Hills, "3,000 to 6,000 ft., common at tea-blossom; the two wet-season broods only, July and October," by Mr. G. F. Hampson,† as "*Ismene helirius*, Cramer," under which name it stands in the British Museum, but it does not agree with the original figure,‡ which shows the upperside only, and has a broad outer darker band to both wings, no costal vermilion streak to the forewing, and the cilia of the hindwing concolorous with that of the forewing instead of being rich vermilion, this being the most conspicuous feature of *I. fergusonii*. Moreover, Cramer gives Surinam as the habitat of his "*Papilio*" *helirius*. Mr. Harold S. Ferguson also records it || from the High Range, Travancore, "where it appears to be common in April and May," under the name of *Ismene jaina*, Moore.

Described from numerous specimens from the Nilgiri Hills and Travancore kindly sent me by Lieut. E. Stokes Roberts, R. E., Mr. G. F. Hampson, and Mr. Harold S. Ferguson, after the latter of whom I have much pleasure in naming it, taken in April, May, August, and October. In Major C. T. Bingham's collection is a large female specimen taken at Kollido, Papun Hills, Tenasserim, Burma, in December, 1891, which probably belongs to this species, but differs from South Indian specimens in having the vermilion colour of the hindwing on the underside more extensive and diffused, almost covering the posterior two-thirds of the wings. It is very large, being 2·9 inches in expanse.

Genus CAPILA, Moore.

Genus PISOLA, Moore.

Palpi large, porrect, projecting beyond the head, densely pilose; third joint conical, half the length of the second.

Palpi large, erect, projecting beyond the head, densely pilose; third joint minute, conical.

* Bull. Soc. Ent. France, fifth series, vol. vi, p. x, n. 12 (1876).

† Journ. A. S. B., vol. lvii, pt. 2, p. 365, n. 216 (1888).

‡ Pap. Ex., vol. i, p. 94, pl. lx, fig. D (1775).

|| Journ. Bomb. Nat. Hist. Soc., vol. vi, p. 446, n. 185 (1891).

Antennæ extending to half the length of the forewing.

Body moderately short.

Abdomen extending to near the anal angle of the hindwing.

Legs slender; femora slightly pilose beneath; hind tibiæ with a dense tuft of very long hairs at the side; mid tibiæ with a pair, and hind tibiæ with two pairs, of apical spurs.

Wings large, broad.

MALE. *Forewing*, costa nearly straight; apex acute; exterior margin very oblique; posterior margin abbreviated, half the length of the costa.

Hindwing with the apex angled; exterior margin convex, with a slight angle in the middle.

FEMALE. Larger than the male. *Forewing*, costa slightly arched; exterior margin oblique; posterior margin two-thirds the length of the costa.

Hindwing nearly quadrate, the exterior margin being produced to an abrupt angle in the middle.

Above are given, as written, Mr. Moore's original descriptions of the genera *Capila* and *Pisola*, described in the Proceedings of the Zoological Society of London for 1865, page 785, arranged opposite to one another for convenience of comparison. Of the

Antennæ rather long, curved backwards at the apex.

Body very stout.

Abdomen extending to within one-third of the length of the hindwing.

Legs moderately slender; femora pilose beneath; mid tibiæ armed with a pair, and hind tibiæ with two pairs, of slender apical spurs.

Wings large, broad.

[MALE and FEMALE]. *Forewing*, costa slightly arched; exterior margin oblique; posterior margin straight; subcostal nervure six-branched; second and third branches arising at equal distances from the first; fourth to sixth contiguous at their base to the third.

Hindwing convex at the base of the anterior margin; apex, exterior margin, and anal angle convex.

former he describes both sexes, but is evidently unaware that the dense tuft of very long hairs at the side of the tibia on the posterior leg is a male secondary sexual character. Of the latter he presumably means his description to apply to both sexes also, as in describing the type species he mentions them both. Both genera contain a single species each, and Mr. Moore has most unfortunately mixed them up in a terrible way. What he describes as the female of *Capila jayadeva* is the true male of *Pisola zennara*; and what he gives as the male of *Pisola zennara* is the true female of *Capila jayadeva*. He has figured both sexes of the true *Capila jayadeva*.

The specific descriptions of the two species should be rearranged thus:—

CAPILA JAYADEVA, Moore.

MALE. UPPERSIDE, *both wings* brown, with the base clothed with orange-yellow hairs; a narrow longitudinal semi-transparent streak between the veins, the discoidal cell having two streaks, and a third but short streak arising from its extremity. UNDERSIDE, *both wings* paler brown, the semi-transparent streaks being less prominent. *Palpi* (except third joint and a few surrounding hairs which are brown), *head* (except a spot on the forehead which is brown), and *thorax* above orange-yellow; *thorax* below and *legs* brown; *abdomen* brown, with narrow white segmental bands. FEMALE. UPPERSIDE, *both wings* brown. *Forewing* with a broad yellowish-white semi-transparent irregular-margined discal band obliquely from the middle

PISOLA ZENNARA, Moore.

MALE. UPPERSIDE, *both wings* similar [to the male of *Capila jayadeva*], but with the thorax and the base of the wings brown [instead of being clothed with orange-yellow hairs]. [UNDERSIDE, *both wings* as above.] FEMALE. UPPERSIDE, *both wings* [as in the female of *Capila jayadeva*], except that the two greyish longitudinal streaks between each pair of veins exteriorly in the hindwing are absent. [UNDERSIDE, *both wings* as above.]

of the costa to the posterior angle.

Hindwing exteriorly with two greyish longitudinal streaks between each pair of veins.

UNDERSIDE, *both wings* uniform brown. *Forewing* with the oblique discal band as above. *Cilia* brown. Front of *head* and *palpi* dull orange-yellow; *body* and *legs* brown; *abdomen* with a pale greyish anal tuft.

Genus CROSSIURA, nov.

MALE. FOREWING, *costa* slightly arched; *apex* rather acute; *outer margin* slightly convex; *inner angle* rounded; *inner margin* straight: *costal nervure* ending on the costa considerably beyond the apex of the discoidal cell; *subcostal nervules* progressively from the base of the wing originating closer together, the fourth arising well before the apex of the cell and ending as usual at the apex of the wing; *subcostal nervure* ending well below the apex; *upper disco-cellular nervule* strongly outwardly oblique; *middle* disco-cellular short, upright, concave; *lower* disco-cellular twice as long as the middle one, in the same straight line, straight; *third median* nervule arising at the lower end of the cell; *second* median arising some distance before the end; *first* median arising near the base of the wing, at twice the distance from the second as the second arises from the first; *submedian nervure* straight; *internal* nervure short. HINDWING, elongated, narrow; *costa* regularly arched; *apex* rounded; *outer margin* quite straight from the apex to the termination of third median nervule, then well rounded to the anal angle, this rounded portion being at about right-angles to the rest of the outer margin; *anal angle* dilated, folded over beneath, the cilia being there developed into two or three strong and thick tufts of hair $\cdot 2$ of an inch in length; *abdominal margin* nearly straight: *costal nervure* evenly curved, ending at the apex of the wing; *first subcostal nervule* arising well before the apex of the cell; *upper disco-cellular* nervule short, strongly concave, outwardly oblique; *lower* disco-cellular about three times as long as the